UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,879	08/04/2003	Warren Letzsch	696-261	5235

47888 7590 12/07/2006

HEDMAN & COSTIGAN P.C.
1185 AVENUE OF THE AMERICAS
NEW YORK, NY 10036

EXAMINER	
DOUGLAS, JOHN CHRISTOPHER	

ART UNIT	PAPER NUMBER
1764	

DATE MAILED: 12/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/633,879	LETZSCH, WARREN	
	Examiner	Art Unit	
	John C. Douglas	1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 September 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-45* is/are pending in the application.

4a) Of the above claim(s) *23-44* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22 and 45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-45* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Examiner acknowledges the response filed on 9/18/2006 containing a listing of the claims and remarks.

Applicant's arguments, with respect to the 102(b) rejections of claims 1-6, 8, 10-13, 15, 16, 18-21 and 45 have been fully considered and are persuasive. The 102(b) rejection has been withdrawn.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

1. Claims 1-6, 8, 10-13, 15, 16, 18-21 and 45 are rejected under 35 U.S.C. 103(a) as obvious over Owen (US 5248408).

2. With respect to claims 1 and 16, Owen discloses a FCC process comprising contacting a hot regenerated catalyst in a cracking reactor; separating the coked catalyst from the cracked products; stripping volatiles from the coked catalyst with steam at temperatures between 1050 and 1200 degrees F; cooling the hot catalyst from the stripper; returning the cooled catalyst to the stripping zone and obtaining a desired stripper temperature by controlling the stripped catalyst recycle (see Owen, column 1, lines 23-35, column 6, line 51 – column 7, line 12, column 16, lines 63-68, and column 20, lines 7-21).

Owen does not explicitly disclose monitoring the temperature of the spent catalyst particles in the stripping zone to determine whether the temperature exceeds a target stripping temperature ranging from about 950 to about 1075 degrees F and if target temperature is exceeded, withdrawing a portion of stripped catalyst to a cooler and recycling the cooled catalyst back to the stripping zone to bring the stripping zone back to the target temperature.

However, it is inherent that Owen would monitor the temperature of the stripper if the temperature of the stripper were to be known. Also, it would be obvious to make the control of stripper temperature automated and continuous because *In re Venner*, 262 F.2d 459 (CCPA 1955), held that broadly providing an automatic or mechanical means to replace a manual activity which accomplished the same result is not sufficient to distinguish over the prior art (see MPEP 2144.04 III) and in *In re Dilnot*, 319 F.2d 188 (CCPA 1963), the court held that continuous operation would have been obvious over the batch processes of the prior art (see MPEP 2144.04 V.E.).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of Owen to include monitoring the temperature of the spent catalyst particles in the stripping zone to determine whether the temperature exceeds a target stripping temperature ranging from about 950 to about 1075 degrees F and if target temperature is exceeded, withdrawing a portion of stripped catalyst to a cooler and recycling the cooled catalyst back to the stripping zone to bring the stripping zone back to the target temperature because it is inherent that Owen would monitor the temperature of the stripper if the temperature of the stripper were to be known and it would be obvious to make the process automated and continuous.

3. With respect to claims 2 and 3, Owen discloses that the cracking reactor is a riser reactor (see Owen, column 8, lines 20-21).

4. With respect to claim 4, Owen discloses many possible feeds, such as petroleum distillates, gas oils, vacuum gas oils, atmospheric residuals and vacuum residuals (see Owen, column 15, lines 15-35).

5. With respect to claim 5, Owen discloses that cyclones located in an upper portion of a vessel separate the hydrocarbon from the spent catalyst and discharges the spent catalyst down to the stripping zone in the lower portion of the vessel (see Owen, column 36-39).

6. With respect to claim 6, Owen discloses where the stripping zone is provided with baffles (see Owen, column 9, line 37-38).

7. With respect to claim 8, Owen discloses where the catalyst cooler is located outside of the disengaging vessel (see Owen, column 17, lines 46-64).

8. With respect to claims 10, 11, 18, and 19, Owen discloses a catalyst cooler that receives hot catalyst from a stripping zone, cools the hot catalyst, and recycles the cooled catalyst back to the stripping zone using a fluid that is also sent to the stripping zone to separate vapor from stripped catalyst (see Owen, column 17, lines 35-68 and Figure 1).

9. With respect to claims 12, 13, 20, and 21, Owen discloses where the target stripping temperature ranges from at least 50 degrees F above a reactor outlet temperature of between 900 and 1150 degrees F to about 1300 degrees F (see Owen, column 16, lines 24-26 and lines 63-68).

10. With respect to claim 15, Owen discloses sending the stripped catalyst to a catalyst regenerator and recycling the regenerated catalyst to the reactor (see Owen, column 7, lines 1-12).

11. With respect to claim 45, Owen discloses a FCC process comprising contacting a hot regenerated catalyst in a cracking reactor; controlling the riser top temperature by adjusting the catalyst to oil ratio by adjusting a control valve that feeds hot regenerated catalyst; separating the coked catalyst from the cracked products where the coked catalyst collects as a bed of catalyst; stripping volatiles from the coked catalyst with steam at temperatures between 1050 and 1200 degrees F; cooling the hot catalyst from the stripper; returning the cooled catalyst to the stripping zone and obtaining a desired stripper temperature by controlling the stripped catalyst recycle (see Owen, column 1, lines 23-35, column 6, line 51 – column 7, line 12, column 8, lines 20-35 and 53-55, column 16, lines 63-68, and column 20, lines 7-21).

Owen does not explicitly disclose monitoring the temperature of the spent catalyst particles in the stripping zone to determine whether the temperature exceeds a target stripping temperature ranging from about 950 to about 1075 degrees F and if target temperature is exceeded, withdrawing a portion of stripped catalyst to a cooler and recycling the cooled catalyst back to the stripping zone to bring the stripping zone back to the target temperature.

However, it is inherent that Owen would monitor the temperature of the stripper if the temperature of the stripper were to be known. Also, it would be obvious to make the control of stripper temperature automated and continuous because *In re Venner*, 262 F.2d 459 (CCPA 1955), held that broadly providing an automatic or mechanical means to replace a manual activity which accomplished the same result is not sufficient to distinguish over the prior art (see MPEP 2144.04 III) and in *In re Dilnot*, 319 F.2d 188 (CCPA 1963), the court held that continuous operation would have been obvious over the batch processes of the prior art (see MPEP 2144.04 V.E.).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of Owen to include monitoring the temperature of the spent catalyst particles in the stripping zone to determine whether the temperature exceeds a target stripping temperature ranging from about 950 to about 1075 degrees F and if target temperature is exceeded, withdrawing a portion of stripped catalyst to a cooler and recycling the cooled catalyst back to the stripping zone to bring the stripping zone back to the target temperature because it is inherent that Owen

would monitor the temperature of the stripper if the temperature of the stripper were to be known and it would be obvious to make the process automated and continuous.

12. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Owen in view of Raterman (US 5296131). Owen discloses everything in claim 5 (see paragraph 8), but does not disclose where the stripping zone is provided with packing.

However, Raterman discloses that the stripping zone may contain packing (see Raterman, column 8, lines 54-68).

Raterman discloses that the packing is used to improve contact of stripping steam and catalyst (see Raterman, column 8, lines 54-68).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of Owen to include that the stripping zone may contain packing in order to improve contact of stripping steam and catalyst.

13. Claims 9, 14, 17, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Owen in view of Long (US 5571482).

14. With respect to claims 9 and 17, Owen discloses everything in claims 1 and 16 (see paragraph 5), and Owen discloses a catalyst cooler that receives hot catalyst from a stripping zone, cools the hot catalyst, and recycles the cooled catalyst back to the stripping zone (see Owen, column 17, lines 35-68 and Figure 1).

Owen does not disclose receiving the hot catalyst from the top portion of the stripping zone and sending the cooled catalyst to the lower portion of the stripping zone.

However, Long discloses receiving hot catalyst from the top portion of the regeneration zone and sending the cooled catalyst to the lower portion of the

regeneration zone (see Long, column 5, line 34 – column 6, line 38 and Figures 1 and 3).

Long discloses that discharging the cooled catalyst at the bottom of the vessel ensures proper dispersion of the cooled catalyst (see Long, column 6, lines 34-62).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of Owen to include receiving hot catalyst from the top portion of the regeneration zone and sending the cooled catalyst to the lower portion of the regeneration zone in order to ensure proper dispersion of the cooled catalyst.

15. With respect to claims 14 and 22, Owen discloses everything in claims 1 and 16 (see paragraph 5), but Owen does not disclose placing a temperature sensor in the striping zone which signals a valve control means to control the amount of catalyst being withdrawn from the stripping zone to the catalyst cooler.

However, Long discloses monitoring the temperature with a thermocouple and that an increase in temperature causes the slide valve to open resulting in an increase in catalyst circulation through cooler (see Long, column 7, lines 24-35).

Long discloses that controlling the slide valve with a thermocouple to maintain a control temperature (see Long, column 7, lines 9-15).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify the process of Owen to include monitoring the temperature with a thermocouple and that an increase in temperature causes the slide valve to open

resulting in an increase in catalyst circulation through cooler in order to maintain a control temperature.

Response to Arguments

1. Applicant's arguments with respect to the 103 rejections have been fully considered but they are not persuasive.

2. Applicant first argues that Applicant's claimed temperature range of between about 950 to about 1075 degrees F is not an obvious modification of the overlapping temperature range of between 1050 to 1200 degrees F found in Owen '408 because Applicant argues that the catalyst in the stripper is heated. However, Owen '408 discloses feeding cooled catalyst into the primary stripping zone (see Owen, column 7, lines 1-8).

3. Second, Applicant argues that the prior art is only directed to fluidized catalytic cracking processes and that Applicant's invention is not limited to such processes. However, in response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., that the claimed invention must be directed to processes other than fluidized catalytic cracking processes) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

4. Third, Applicant argues that the prior art fails to disclose a need for a temperature monitoring system for the spent catalyst. Owen discloses monitoring and controlling the temperature in the spent catalyst regenerator (see Owen, column 20, lines 28-51). Also, according to *In re Burhans*, 154 F.2d 690, the selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results (See MPEP 2144.04 IV. C.). Modifying Owens to control the stripper temperature instead of the subsequent regenerator temperature would be a simple change in sequence of reducing the catalyst temperature. Thus, it is obvious to have a temperature monitoring system for the spent catalyst.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John C. Douglas whose telephone number is 571-272-1087. The examiner can normally be reached on 7:30 A.M. to 4:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn A. Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JCD

12/01/2006